



DOE/SC Status Review

of the

Muon $g-2$ Project

Fermi National Accelerator Laboratory

April 6-7, 2016

Kurt Fisher

Committee Chair

Office of Science, U.S. Department of Energy

<http://www.science.doe.gov/opa/>



- **Closeout report (prepared in PowerPoint)**
 - Presented Thursday, April 7
 - Instructions—slide 10
 - Template—slide 12
- **Final report draft (prepared in MS Word)**
 - Due Monday, April 11 to Casey
(casey.clark@science.doe.gov)
 - Instructions—slide 11



DOE EXECUTIVE SESSION AGENDA

Wednesday, April 6, 2016—Fermilab, Wilson Hall, Comitium

8:00 a.m.	DOE Executive Session.....	K. Fisher
8:15 a.m.	Program Perspective.....	T. Lavine
8:25 a.m.	Federal Project Director Perspective.....	P. Philp
8:35 a.m.	Questions	
8:45 a.m.	Adjourn	

Project and review information is available at:

<https://web.fnal.gov/experiment/MuonG2/Reviews/Pages/DOE-Status-Review-April-2016.aspx>

Username: G2Mreviewer (case sensitive)

Password: g2mrev



Review Committee Participants

Kurt Fisher, DOE/SC, Chairperson

SC1 Accelerator

* Rod Gerig, retired ANL
Peter Ostroumov, ANL

SC2 Storage Ring

* Ross Schlueter, LBNL
Sasha Zholents, ANL

SC3 Technical Integration

* Soren Prestemon, LBNL
Howard Gordon, BNL

SC4 Detectors

* Richard Kass, OSU

SC5 Cost and Schedule

* Jerry Kao, DOE/SC
Ron Lutha, DOE/ASO

SC6 Project Management

* Jeff Sims, SLAC
Steve Trotter, ORNL

Observers

Mike Procario, DOE/SC
Ted Lavine, DOE/SC
Petros Rapidis, DOE/SC
Bill Wisniewski, SLAC

Pepin Carolan, DOE/FSO
Paul Philp, DOE/FSO

LEGEND

SC Subcommittee
* Chairperson

Count: 12 (excluding observers)



SC Organization

Office of the Director (SC-1)
Cherry Murray

Deputy Director
for Field Operations (SC-3)

Joseph McBrearty
Associate Deputy – *Stephanie Short*

Ames SO
Cynthia Baebler

Argonne SO
Joanna Livengood

Berkeley SO
Paul Golan (A)

Brookhaven SO
Frank Crescenzo

Fermi SO
Michael Weis

Oak Ridge SO
Johnny Moore

Princeton SO
Peter Johnson

Pacific NWest SO
Roger Snyder

Stanford SO
Paul Golan

Thomas Jeff. SO
Joe Arango

Chicago
Office
*Roxanne
Purucker*

SC
Integrated
Support
Center

Oak Ridge
Office
*Donald Thress
(A)*

Office of
Safety and
Security
Policy
(SC-31)
T. LaPointe

Office of
Laboratory
Policy
(SC-32)
J. LaBarge

Office of
Operations
Program
Management
(SC-33)
*C. Steve
Trischman*

Deputy Director
for Science Programs (SC-2)

Patricia M. Dehmer

Advanced Scientific
Comp. Research (SC-21)
J. S. Binkley

Basic Energy
Sciences (SC-22)
Harriet Kung

Biological & Environ.
Research (SC-23)
Sharlene Weatherwax

Fusion Energy
Sciences (SC-24)
Edmund Synakowski

High Energy
Physics (SC-25)
James Siegrist

Nuclear Physics
(SC-26)
Timothy Hallman

Workforce
Development
for Teachers/
Scientists
(SC-27)
Jim Glownia

Office of
Project
Assessment
(SC-28)
*Stephen W.
Meador*

Small Business
Innovation
Research
(SC-29)
Manny Oliver

Deputy Director
for Resource Management (SC-4)

Jeffrey Salmon
Executive Officer – *Helen DeHart*

Office of Budget
(SC-41)
Kathleen Klausing

Office of Grants &
Contracts (SC-43)
Linda Shariati

Office of Scientific and
Technical Information
(SC-44)
Brian Hitson

Office of Information
Technology and Services
(SC-45)
Vasilios Kountouris

Office of SC
Communications
and Public
Affairs
(SC-47)
Rich Borchelt

Office of
Management
(SC-48)
Cynthia Mays

(A) Acting



1. Are the planned Scope, Schedule and Estimate to Complete updated and credible, including any planned scope enhancements?
2. Has the risk analysis been updated to reflect the real risks for completing the project and are the contingencies acceptable?
3. Are there any significant risks that jeopardize CD-4 completion and require management attention?



Wednesday, April 6, 2016—Fermilab, Wilson Hall, Comitium

8:00 am	Executive Session— Comitium (WH2SE)	K. Fisher
8:45 am	Overview of Project and Performance— One West (WH1W)	C. Polly
9:30 am	Accelerator, Muon Target Station, Beamline,	M. Convery
	Controls and Instrumentation	
10:15 am	Break— Outside of One West	
10:30 am	Overview of Muon Storage Ring, Injection and Shimming	P. Winter
11:20 am	Experimental Detectors.....	B. Casey
12:00 pm	Lunch— Second Floor Cross Over	
1:10 pm	Review Photo— Atrium	
1:20 pm	New Proposed Inflector Design— One West (WH1W)	V. Kashikin
2:00 pm	Project Path Forward.....	C. Polly
2:50 pm	Subcommittee Breakout Session	
4:00 pm	Committee Q&A with Project Team	
5:00 pm	Full Committee Executive Session	
6:30 pm	Adjourn	

Thursday, April 7, 2016

8:00 am	Subcommittee Breakout Session	
10:00 am	DOE Full Committee Executive Session—Dry Run	K. Fisher
12:00 pm	Lunch	
1:30 pm	Closeout Presentation	
2:30 pm	Adjourn	



Executive Summary	Fisher*
1. Introduction	Lavine*
2. Technical Systems Evaluation (Charge Questions 1, 2, 3)	
2.1 Accelerator	Gerig*/SC-1
2.1.1 Findings	
2.1.2 Comments	
2.1.3 Recommendations	
2.2 Storage Ring	Schlueter*/SC-2
2.3 Technical Integration.....	Prestemon*/SC-3
2.4 Detectors.....	Kass*/SC-4
3. Environment, Safety and Health (Charge Questions 1, 2, 3).....	Trotter*/SC-6
4. Cost and Schedule (Charge Questions 1, 2, 3)	Kao*/SC-5
5. Project Management (Charge Questions 1, 2, 3)	Sims*/SC-6

*Lead



Closeout Presentation and Final Report Procedures



(Use PowerPoint / No Smaller than 18 pt Font)

2.1 Use Section Number/Title corresponding to writing assignment list.

List Review Subcommittee Members

List Assigned Charge Questions and Review Committee Answers

2.1.1 Findings – What the project told us

- In bullet form, include your account of factual technical, cost, schedule, and management. Information provided/presented by the Project

2.1.2 Comments – What we think about what the project told us

- In bullet form, include your assessment of project status (observations, concerns, feedback, suggestions, etc.) based on the findings. This section carries more emphasis than the Findings, but does not require an action as do the Recommendations. Do not number your comments.

2.1.3 Recommendations – What we think the project needs to do

1. Beginning with an action verb, provide a brief, concise, and clear statement with a due date.

For Critical Decision reviews, include a specific recommendation addressing how the Committee judged the readiness for the CD, *i.e.*:

- The project is ready to proceed to CD-2; *or*
- The project is ready to proceed to CD-2, after addressing the following recommendations



Format: Final Report

(Use MS Word / 12pt Font)

2.1 Use Section Number/Title corresponding to writing assignment list.

2.1.1 Findings – What the project told us

Include a brief narrative description of technical, cost, schedule, management information provided by the project. Each subcommittee will emphasize their area of responsibility.

Cost and schedule subcommittee should provide attachments for approved project cost breakdown and schedule. Management subcommittee should provide attachment for approved project organization and names of personnel.

2.1.2 Comments – What we think about what the project told us

Descriptive material assessing the findings and making observations and conclusions based on the findings. **The committee's answer to the charge questions should be contained within the text of the Comments Section.** Do not number your comments.

2.1.3 Recommendations – What we think the project needs to do

1. Beginning with an action verb, provide a brief, concise, and clear statement with a due date.
- 2.

Please Note: Recommendations are approved by the full committee and presented at the review closeout briefing. Recommendations SHOULD NOT be changed or altered from the closeout report to the Final Report.



Closeout Report on the DOE/SC Status Review of the

Muon $g-2$ Project

Fermi National Accelerator Laboratory

April 6-7, 2016

Kurt Fisher

Committee Chair

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- **Findings**
- **Comments**
- **Recommendations**



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- **Findings**
- **Comments**
- **Recommendations**



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- **Findings**
- **Comments**
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PROJECT STATUS		
Project Type	MIE / Line Item / Cooperative Agreement	
CD-1	Planned:	Actual:
CD-2	Planned:	Actual:
CD-3	Planned:	Actual:
CD-4	Planned:	Actual:
TPC Percent Complete	Planned: _____%	Actual: _____%
TPC Cost to Date		
TPC Committed to Date		
TPC		
TEC		
Contingency Cost (w/Mgmt Reserve)	\$	_____ % to go
Contingency Schedule on CD-4b	_____ months	_____ %
CPI Cumulative		
SPI Cumulative		



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